



Amendments to the Claims

AUG 15 2008 This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1. (Currently Amended) A two-shaft hinge having a ~~rotation shaft and an opening/closing shaft~~ ~~two-shaft structure~~, comprising:
 - a rotation shaft;
 - an opening/closing shaft;
 - a rotation torque unit in which a plurality of rotation torque generating portions are provided on the rotation shaft, the rotation torque generating ~~portion~~ ~~portions~~ being assembled by putting a first coil spring around an outer periphery of the rotation shaft having a penetrating hole and by abutting a first fixing cam and a first rotating cam on both ends of the first coil spring; and
 - an opening/closing torque unit in which a plurality of opening/closing torque generating portions are provided on the opening/closing shaft, the opening/closing torque generating ~~portion~~ ~~portions~~ being assembled by putting a second coil spring around the opening/closing shaft and by abutting a second fixing cam and a second rotating cam on both ends of the second coil spring; wherein, the two-shaft hinge has a two-shaft structure in which
 - wherein an axial direction of the rotation shaft and an axial direction of the opening/closing shaft are assembled to a hinge housing to be perpendicular to each other, the hinge housing having a first through-hole through which the rotation shaft pierces on one side of the rotation torque unit and a second through-hole through which a harness wiring can pass on the other side of the rotation torque unit, the torque units which generate a sliding torque and a click torque at ~~rotation~~ ~~rotation~~, and an opening/closing operation function on

the rotation shaft and the opening/closing shaft, and the opening/closing torque unit is assembled to either a right side or ~~both right and left sides~~ a left side of the rotation torque unit.

2. (Currently Amended) A two-shaft hinge having a ~~rotation shaft and an opening/closing shaft~~ two-shaft structure, comprising:

a rotation shaft;

an opening/closing shaft;

a rotation torque unit in which a pair of rotation torque generating portions are provided on the rotation shaft, the rotation torque generating portion~~portions~~ being assembled by putting a first coil spring around an outer periphery of the rotation shaft having a penetrating hole and by abutting a first fixing cam and a first rotating cam on one end of the first coil spring; and

an opening/closing torque unit in which a plurality of opening/closing torque generating portions are provided on the opening/closing shaft, the opening/closing torque generating portion~~portions~~ being assembled by putting a second coil spring around the opening/closing shaft and by abutting a second fixing cam and a second rotating cam on both ends of the second coil spring;~~spring, wherein, the two-shaft hinge has a two-shaft structure in which~~

wherein an axial direction of the rotation shaft and an axial direction of the opening/closing shaft are assembled to a hinge housing to be perpendicular to each other, the hinge housing having a first through-hole through which the rotation shaft pierces on one side of the rotation torque unit and a second through-hole through which a harness wiring can pass on the other side of the rotation torque unit, the torque units which generate a sliding torque and a click torque at rotation~~rotation~~, and an opening/closing operation function on the rotation shaft and the opening/closing shaft, and the opening/closing torque unit is assembled to either a right

side or ~~both right and left sides~~ a left side of the rotation torque unit.

3. (Currently Amended) The two-shaft hinge according to claim 1, wherein the ~~sliding torque and the click torque are generated by abutting the fixing cam and the rotating cam in the rotation torque unit is assembled on the rotation shaft, and a plurality of the rotation torque generating portions provided are assembled on the rotation shaft, torque unit and have torque generating operations to generate the sliding torque and the click torque by abutting the first fixing cam and the first rotating cam, the torque generating operations being different and independent to one another by combining the first fixing cam and the first rotation cam having different positions of a concave groove (eave) and a convex protrusion (convex) of the cams~~ ~~first~~ fixing cam and the first rotation cam or used by the rotation shaft by combining pair and/or a different number numbers of the cams are combined, whereby the rotation torque unit which incorporates with the plurality of rotation torque generating portions having different torque generation operations is formed, and the torque unit is assembled on the rotation shaft.

4. (Currently Amended) The two-shaft hinge according to claim 1, wherein the ~~sliding torque and the click torque are generated by abutting the fixing cam and the rotating cam in the opening/closing torque unit is assembled on the opening/closing shaft, and a plurality of the opening/closing torque generating portions provided are assembled on the opening/closing shaft, torque unit and have torque generating operations to generate the sliding torque and the click torque by abutting the second fixing cam and the second rotating cam, the torque generating operations being different and independent to one another by combining the second fixing cam and the second rotation cam having different positions of a concave groove (eave) and a convex protrusion (convex) of~~

the ~~cams~~ second fixing cam and the second rotation cam used by the opening/closing shaft or by combining pair and/or a different number numbers of the cams are combined, whereby the opening/closing torque unit which incorporates with the plurality of opening/closing torque generating portions having different torque generation operations is formed, and the torque unit is assembled on the opening/closing shaft.

5. (Currently Amended) The two-shaft hinge according to claim 1, wherein ~~a part of a cross-section of a part of~~ the rotation shaft and the opening/closing shaft is other than a circle, or is formed to be a quadrangle or to have a shape having a major axis and a minor axis, which is other than a circle, and the rotation shaft and the opening/closing shaft having a shape which allows allowing the first and the second fixing cams for rotation and opening/closing, which are used respectively in the rotation torque generating portions and the opening/closing torque generating portions, to move respectively in ~~an~~ the axial direction of the rotation shaft and the axial direction of the opening/closing shaft, but which inhibits them ~~inhibiting~~ the first and the second fixing cams from rotating on a periphery of with respect to the rotation shaft, are employed.

6. (Currently Amended) The two-shaft hinge according to claim 1, ~~wherein further comprising~~ a stopper mechanism to restrict a rotation angle and an opening/closing angle of the rotation shaft and the opening/closing shaft ~~is mounted so that a rotation range~~ ranges of the rotation shaft and the opening/closing shaft ~~is~~ are restricted.

7. (Currently Amended) The two-shaft hinge according to claim 1, ~~wherein further comprising~~ a disc spring, a waved plate spring, or a thin plate spring ~~is employed in place of~~ the first and the second coil ~~springs~~ springs which generates ~~generate~~ an abutting force in the torque generating

portions used in the rotation torque unit and the opening/closing torque unit, ~~so that a size is reduced.~~

8. (Currently Amended) The two-shaft hinge according to claim 1, wherein ~~a penetrably holed shaft~~ the rotation shaft having the penetrating hole in which a through-hole is provided at a center of the rotation shaft ~~is used, in order~~ to enable ~~at~~ the harness wiring.

9. (Currently Amended) The two-shaft hinge according to claim 1, wherein a case for the rotation shaft and a case for the opening/closing shaft in each of which an outer periphery ~~thereof partially~~ has a groove or a deformed cross-section other than a circle are fitted with or fixed to the first and the second rotating cams in each of which an outer periphery ~~thereof~~ has a protrusion or a deformed cross-section, in order to effectively transmit a sliding torque force and a click torque force, which are generated in the first and the second rotating cams used on the rotation shaft and the opening/closing shaft, to the hinge housing.

10. (Currently Amended) The two-shaft hinge according to claim 1, wherein the first rotating cam used in the rotation torque generating portion ~~portions~~ is configured to be another member as a bottom portion to which the rotation torque unit is fitted and attached in the hinge housing, ~~whereby reduction in~~ to reduce the number of components, ~~reduction in~~ and size, and ~~improvement in~~ improve the strength of the hinge housing are achieved.

11. (Currently Amended) The two-shaft hinge according to claim 1, wherein the rotation torque unit and the opening/closing torque unit are assembled as an independent unit, ~~thereafter they are~~ the torque units being fitted and attached to or screwed into the hinge housing in which a means for fitting or screwing to fix is provided in advance.

12. (Currently Amended) The two-shaft hinge according to claim 1, ~~wherein, for mounting and fixing the two-shaft hinge to a device chassis, further comprising a fixing base component adhered to the rotation shaft for mounting and fixing the two-shaft hinge to a device chassis, wherein is added and the two-shaft hinge is fixed by the base, whereby the device chassis is designed easily component.~~